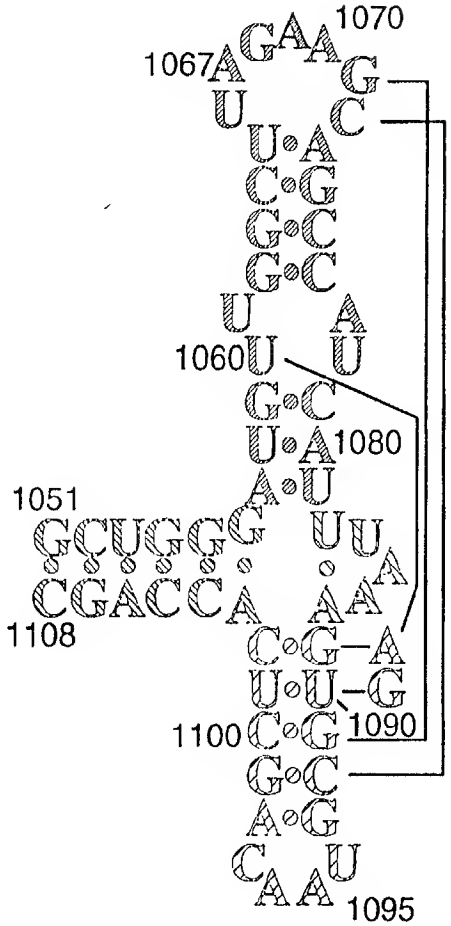


FIG. 1a

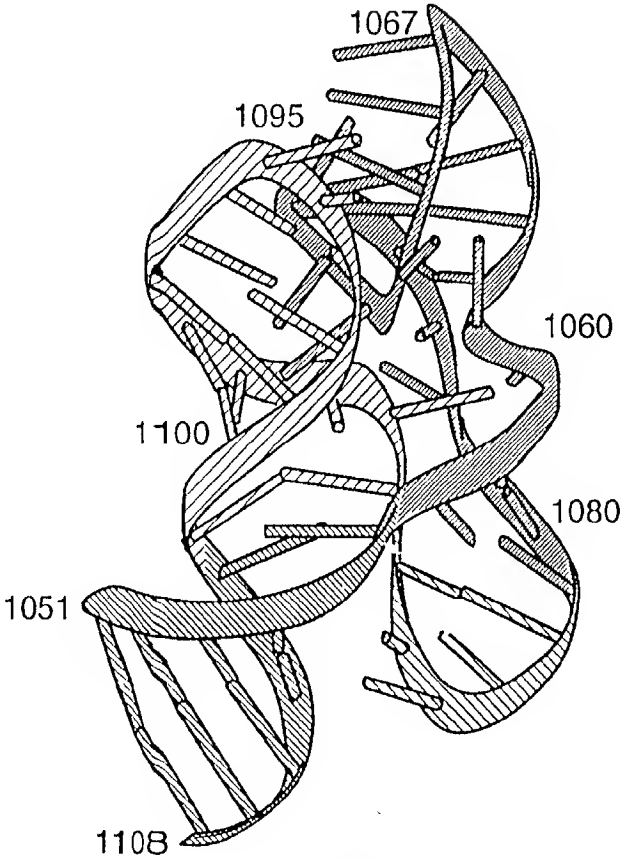


FIG. 1b

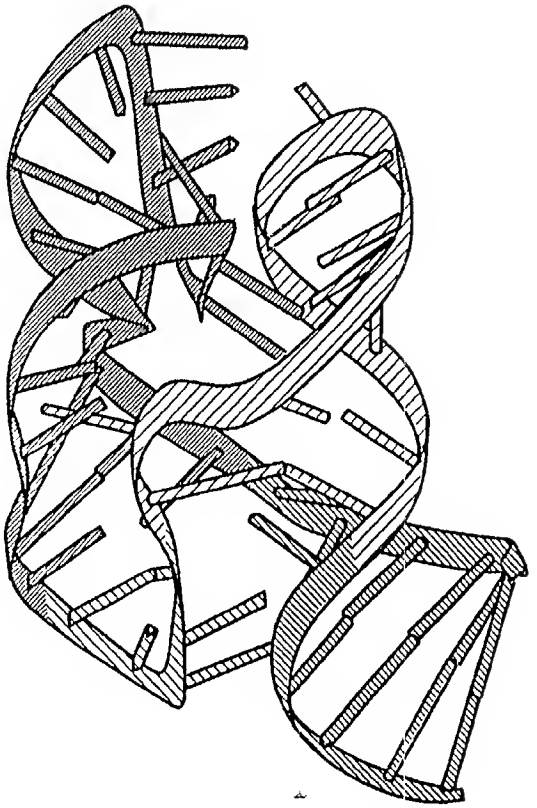


FIG. 1c

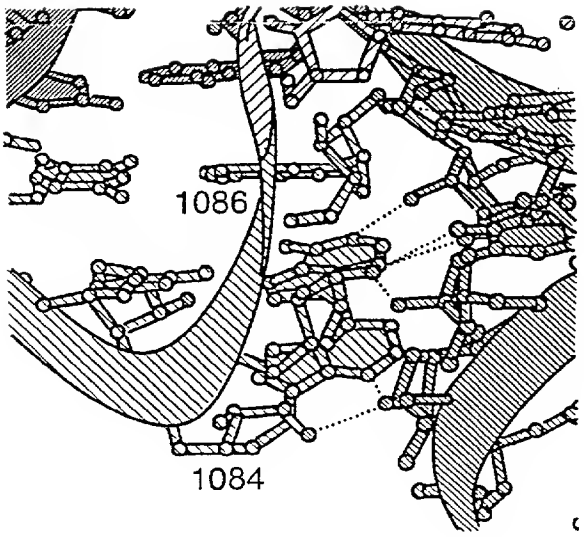


FIG. 2a

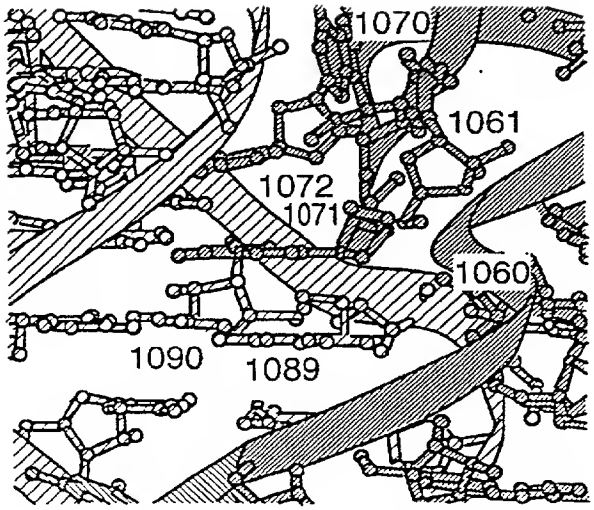


FIG. 2b

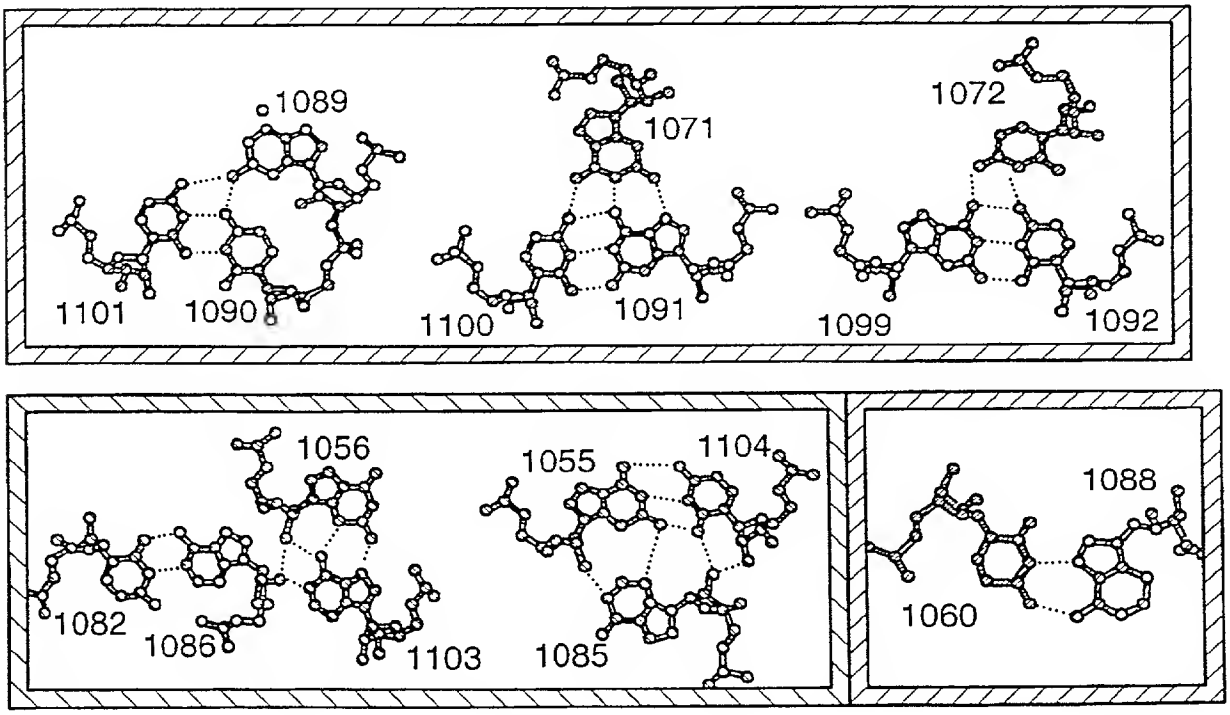


FIG. 2c

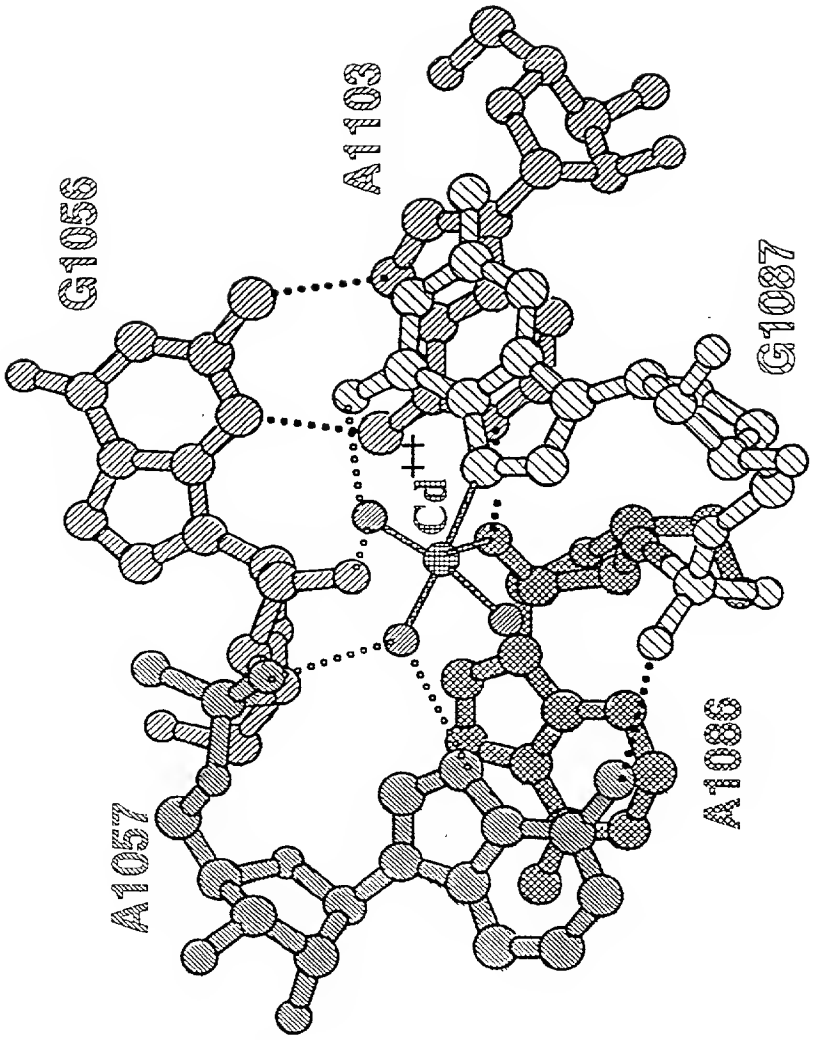


FIG. 3b

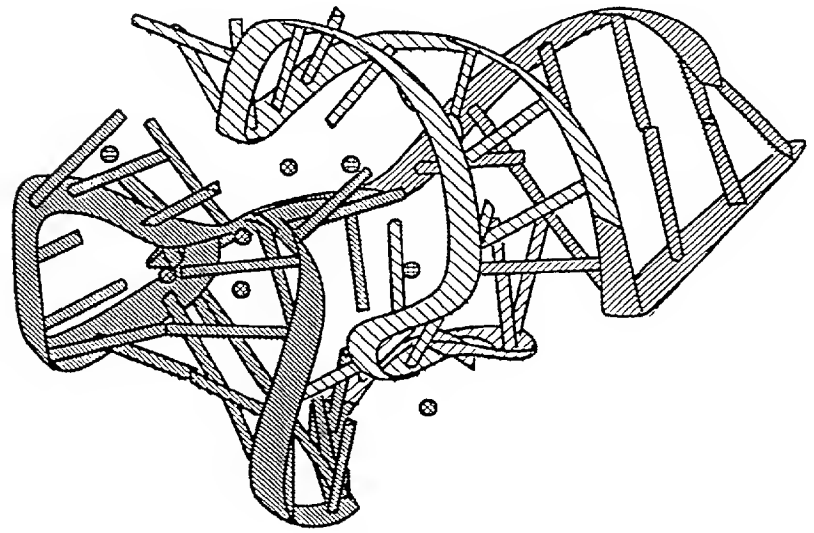
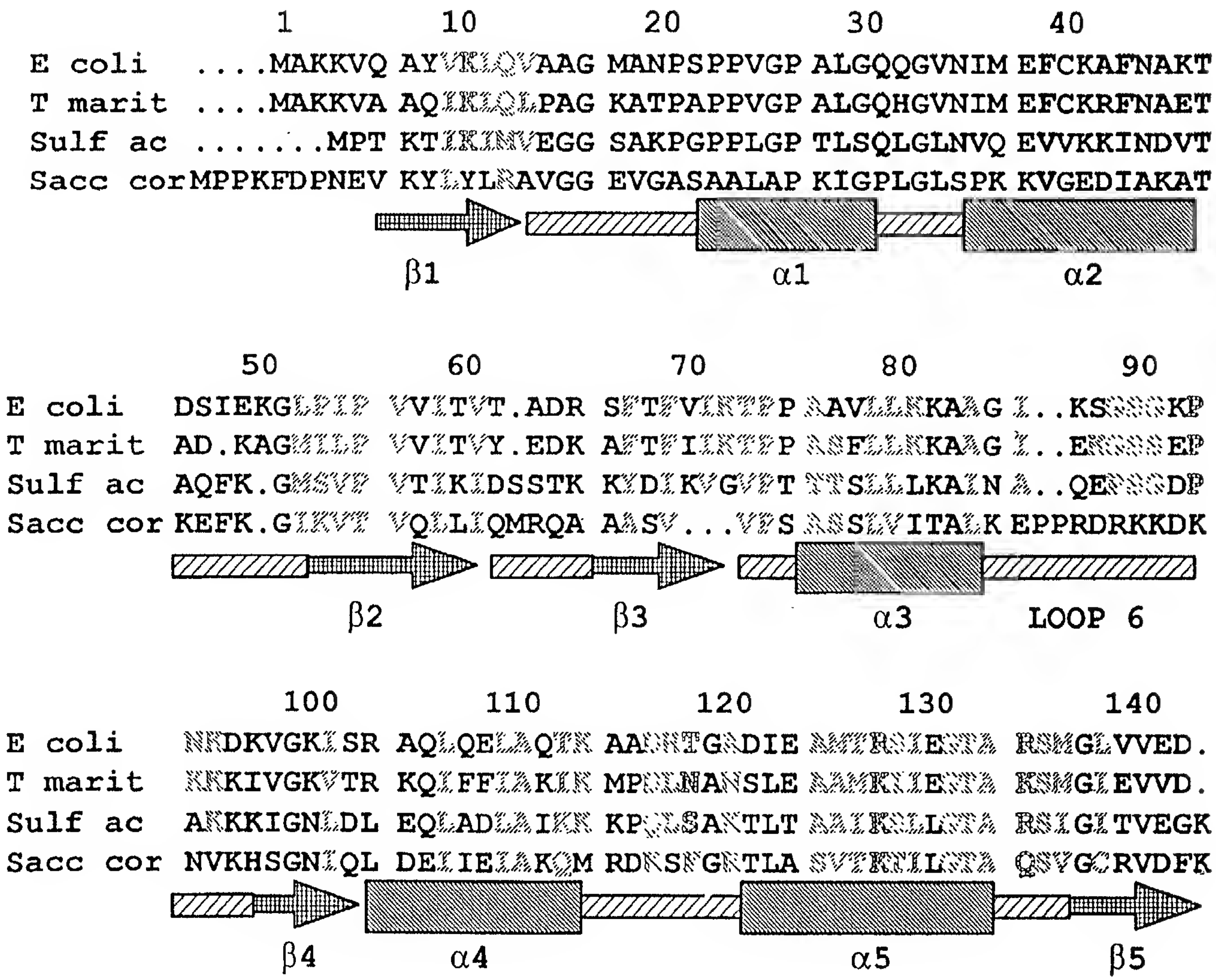


FIG. 3a



1 10 20 30 40
E coli ....MAKKVQ AYVKLQVAAG MANPSPPVGP ALGQQGVNIM EFCKAFNAKT
T marit ....MAKKVA AQIKLQLPAG KATPAPPVGP ALGQHGVNIM EFCKRFNAET
Sulf ac ....MPT KTIKIMVEGG SAKPGPPLGP TLSQLGLNVQ EVVKKINDVT
Sacc cor MPPKFDPNEV KYLYLRAVGG EVGASAALAP KIGPLGLSPK KVGEDIAKAT
β1 α1 α2
50 60 70 80 90
E coli DSIEKGLPIP VVITVT.ADR SFTFVTKTPP AAVLLKKAAG I..KSGSGKP
T marit AD.KAGMILP VVITVY.EDK AFTFILKTPP ASFLLKKAAG I..EKGSSEP
Sulf ac AQFK.GMSVP VTIKIDSSTK KYDIKVGVPT TTSLLLKAIN A..QEPSGDP
Sacc cor KEFK.GIKVT VQLLIQMRQA AASV...VPS ASSLVITALK EPPRDRKKDK
β2 β3 α3 LOOP 6
100 110 120 130 140
E coli NKDKVGKISR AQLQEIAQTK AADMTGADIE AMTRSIEGTA RSMGLVVED.
T marit KKKIVGKVTR KQIFFIAKIK MPDLNANSLE AAMKLIEGTA KSMGIEVVD.
Sulf ac AKKKIGNIDL EQLADIAIKK KPQLSANTLT AAIKSILGTA RSIGITVEGK
Sacc cor NVKHSGNIQL DEIIEIAKQM RDKSFGKTLA SVTKEILGTA QSVGCRVDFK
β4 α4 α5 β5

FIG. 4a

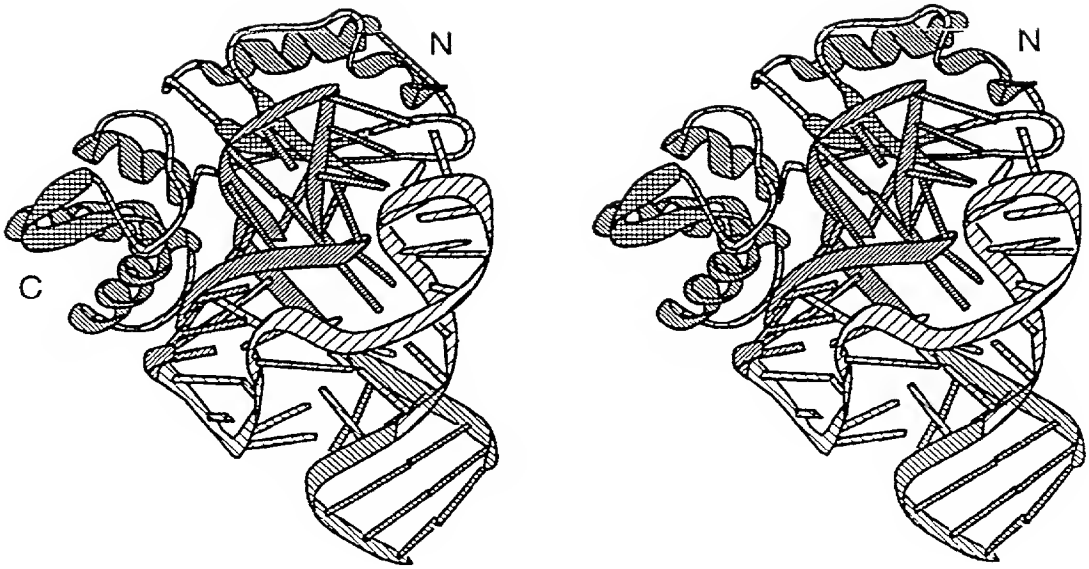


FIG. 4b

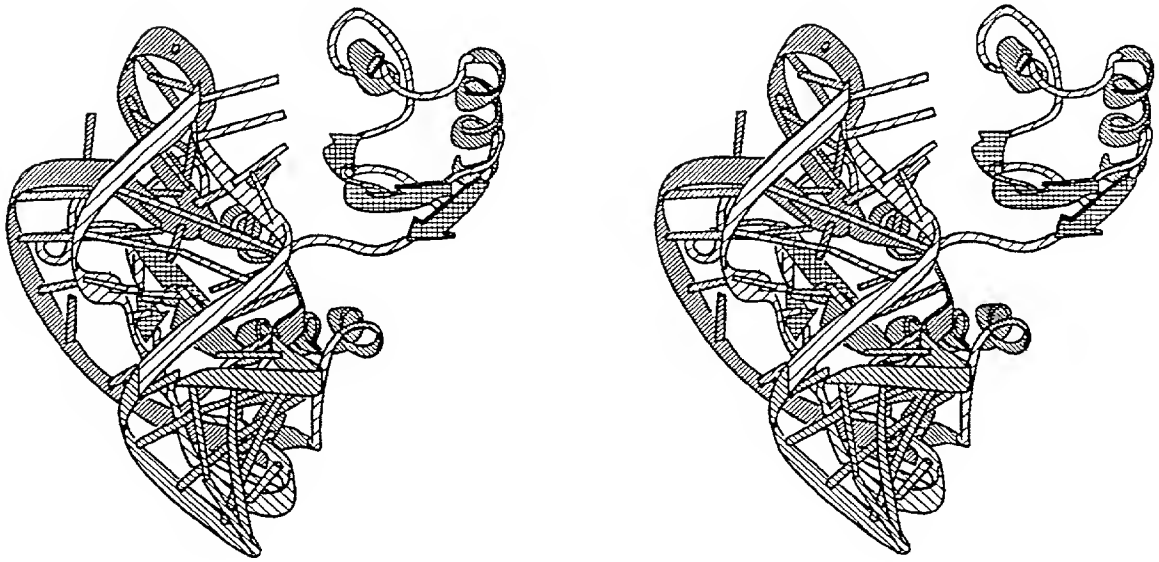
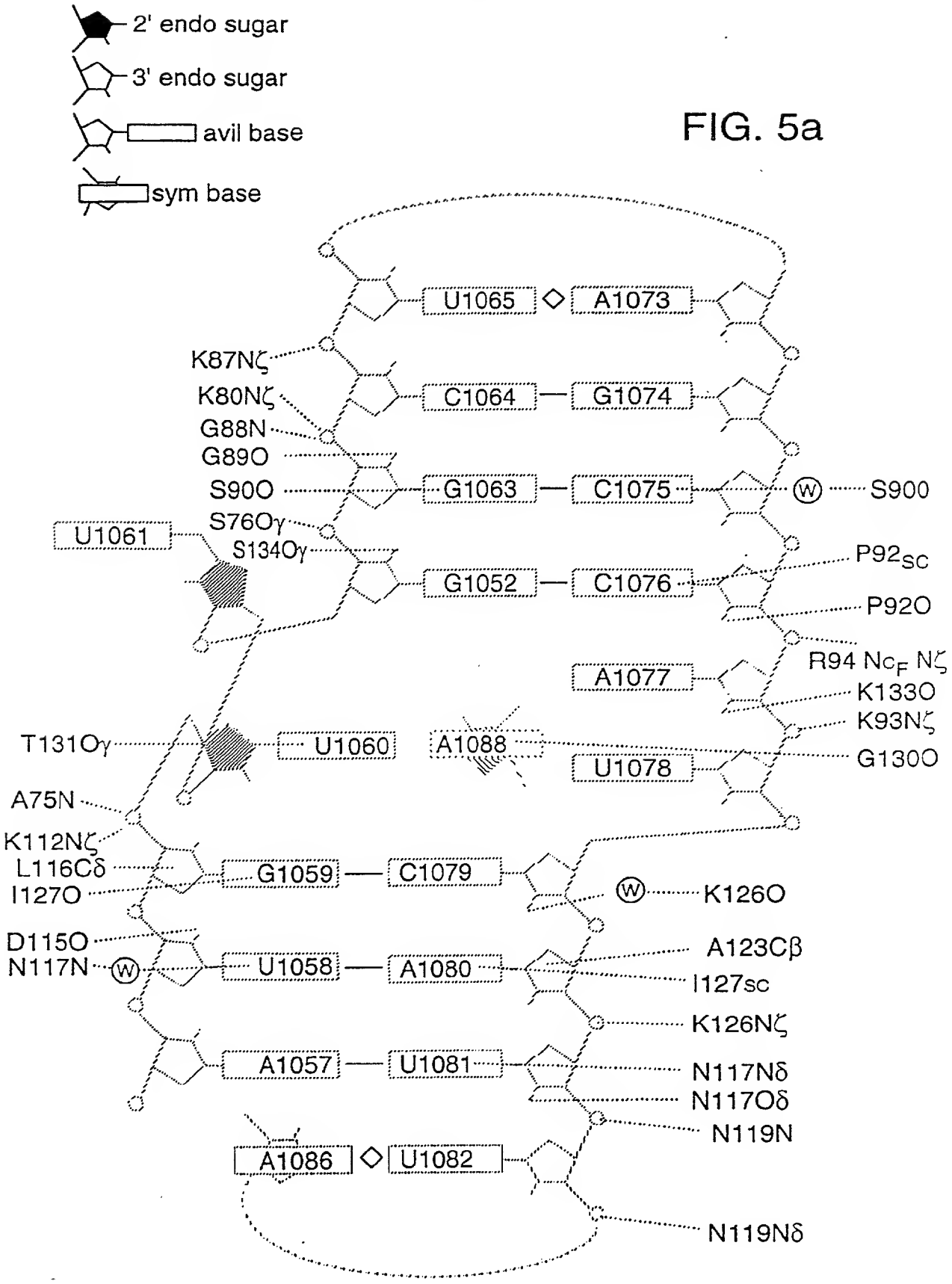


FIG. 4c


2' endo sugar
3' endo sugar
avil base
sym base
U1065
A1073
K87Nζ
K80Nζ
C1064
G1074
G88N
G89O
S90O
G1063
C1075
S900
S76Oγ
U1061
S134Oγ
P92SC
G1052
C1076
P92O
R94 NcF Nζ
A1077
K133O
K93Nζ
T131Oγ
U1060
A1088
G130O
U1078
A75N
K112Nζ
L116Cδ
G1059
C1079
K126O
I127O
D115O
A123Cβ
N117N
U1058
A1080
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K126Nζ
A1057
U1081
N117Nδ
N117Oδ
N119N
A1086
U1082
N119Nδ

FIG. 5a

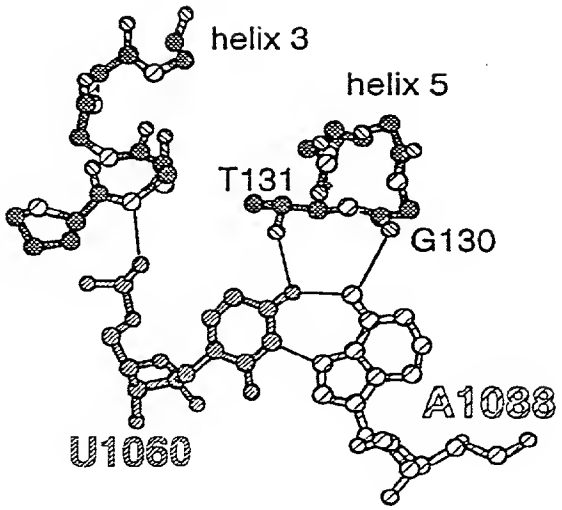

FIG. 5b

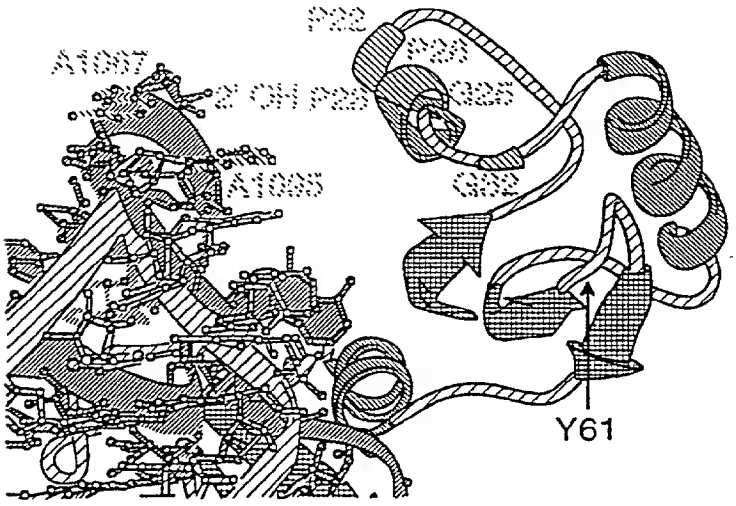

FIG. 6